

Clean Amended Claims

1. (Amended) A method, comprising the steps of:

driving a polyphase motor with a drive voltage;

sampling a back emf of a selected phase of the motor to determine positional error of a motor rotor only while a drive voltage of the selected phase is substantially zero;

generating a speed control signal corresponding to a difference between a desired rotor angular velocity and a rotor speed inferred from a frequency of the drive voltage; and

varying an amplitude of the drive voltage in accordance with the speed control signal.

13. (Amended) An apparatus, comprising:

a brushless DC motor;

a commutation control providing a commutation control signal for a selected phase of the motor in accordance with a sampled back electromotive force (emf) of that phase, wherein the back emf of the phase is sampled only while the corresponding drive voltage for the selected phase is substantially zero, wherein a frequency of a drive voltage of the brushless DC motor is varied in accordance with the commutation control signal; and

a speed control providing a speed control signal in accordance with a difference between a rotor angular velocity inferred from a frequency of the drive voltage and a commanded angular velocity, wherein an amplitude of the drive voltage is varied in accordance with the speed control signal.

23. (New) An apparatus, comprising:

a brushless DC motor;

a commutation control providing a commutation control signal for a selected phase of the motor in accordance with a sampled back electromotive force (emf) of that phase, wherein the

back emf of the phase is sampled only while the corresponding drive voltage for the selected phase is substantially zero, wherein a frequency of a drive voltage of the brushless DC motor is varied in accordance with the commutation control signal; and

a speed control providing a speed control signal in accordance with a difference between a rotor angular velocity inferred from a frequency of the back emf and a commanded angular velocity, wherein an amplitude of the drive voltage is varied in accordance with the speed control signal.

24. (New) An apparatus, comprising:

a brushless DC motor;

a commutation control providing a commutation control signal for a selected phase of the motor in accordance with a sampled back electromotive force (emf) of that phase, wherein the back emf of the phase is sampled only while the corresponding drive voltage for the selected phase is substantially zero, wherein a frequency of a drive voltage of the brushless DC motor is varied in accordance with the commutation control signal; and

a speed control providing a speed control signal in accordance with a difference between a rotor angular velocity inferred from a frequency of the drive voltage and a commanded angular velocity, wherein an amplitude of the drive voltage is varied in accordance with the speed control signal;

a pulse-width-modulated inverter, and

a programmable waveform generator providing a drive waveform to the inverter, wherein a frequency of the drive waveform varies in accordance with the commutation control signal, wherein the inverter provides the drive voltage at a same frequency as the drive waveform.